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RURAL COMMUNITY ENDEAVORS TO ELIMINATE TERMITE PROBLEM WITH HELP FROM FOREST SERVICE FOREST PRODUCTS LABORATORY

One small Wisconsin town's large termite problems may well be over. Using an innovative community-wide eradication approach, a unique combination of environmentally sensitive treatments and applications over several years, U.S. Forest Service researchers have collaborated with private businesses, local citizens, and state agencies to combat this tenacious pest.

Endeavor, Wis., is a struggling but determined rural community of about 450 people in the central part of the state. Homeowners first noticed termite activity in the mid-1980s where initial infestation was likely due to stowaway insects on railroad ties or other imported timber.

Recent work conducted out of the Forest Service's Forest Products Laboratory in Madison, Wis., led to the number of reported termites in Endeavor dropping very quickly after the first year of the project, in 2006. Ongoing monitoring has not detected any activity since fall 2009.

"It was a really big problem," said former Endeavor village clerk June Schumacher, who coordinated with Forest Products Lab researchers Rachel Arango and Rick Green starting in 2006. "Rachel and Dr. Green have been very committed. They've really went above and beyond. Anywhere we thought there might have been termites, they put bait traps. They've done a great job."

Though particular districts in large metropolitan areas, such as the French Quarter in New Orleans, have been the focus of extensive ongoing termite bait programs, the project in Endeavor is an otherwise unique case of the community-wide eradication approach in the United States. This project has helped advance an understanding of effective termite treatment applications and saved citizens of Endeavor tens of thousands of dollars in potential remediation costs.

Arango and Green worked with Alternative Pest Solutions in Madison, Wis., and the University of Wisconsin-Madison's entomology department to develop a three-stage eradication program. The relatively isolated location and confined nature of the five distinct colonies, tens of thousands of termites, in and around the village center made Endeavor an ideal candidate for such community-wide eradication efforts.

The research team coordinated to employ the most ecologically friendly methods for detection and treatment of termites, using the least amount of toxic chemicals possible due to the potential for contamination of the town's shallow water supply and adjoining river basin.

While the financial savings per household for citizens of Endeavor is difficult to estimate with such a unique a community-wide approach, Endeavor homeowners who would have otherwise needed to contract with extermination services individually, have likely saved tens of thousands of dollars in repair costs by participating in this project.

Damage and subsequent repair costs due to termite infestation nationwide is estimated to be about \$11 billion annually. According to Alternative Pest Solutions, termite treatment for the average homeowner costs about \$1000 to \$2000 per property for initial treatment. Necessary ongoing treatments cost an additional \$300 to \$500 per year and can go on indefinitely. Expenses vary depending on the size of the treated structure. Repair costs to address prior damage can be thousands more.

For this project, Green and Arango acquired bait stations through the Forest Products Lab, which were initially placed only on city property. Eventually, all Endeavor homeowners were eligible to participate. Those who elected to receive treatment were covered by an arrangement through the village administration, which paid a total of \$3493 annually between 2006 and 2009 for treatment and monitoring services throughout the village.

The town's location of about 43.7°N latitude, 100 miles north of where termites might typically be found, affords a unique combination of climatic, geologic, and hydrologic conditions for these destructive insects to thrive. Impending changes in global climate patterns, however, may eventually allow for natural migration of colonies further north, making eradication research at the community level all the more important

Community education efforts throughout the project involved newsletter supplements describing what termite activity looks like and how to distinguish termites from ants. Continuing bait station observation and reporting in 2010 and 2011 have been voluntary and will continue indefinitely. Though this project has been ongoing for five years, the underground nature of most termite activity makes it difficult to say that the problem is completely "solved."

"While these persistent pests are much more clever than we initially thought, the termite may well have met its match," Arango said.

"My hat's off to the public-private partnership that teamed up to rid a small town of a vexing and expensive termite problem," said US Forest Service Chief Tom Tidwell. "This endeavor should improve property values and provide other long-term benefits for residents in this economically impacted rural community."

The Forest Products Laboratory was established in 1910 to conserve and extend the country's wood resources. FPL's work with academia, industry, and other government agencies has led to myriad ground-breaking discoveries with great benefit to the public it serves. Additional information on FPL's research is available at www.fpl.fs.fed.us.